The Maryland Fruit Grower

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Edited by the Secretary, A. F. Vierheller, Extension Horticulturist
College Park, Maryland.

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MARYLAND HORTICULTURAL RESEARCH

The Fifty-fifth Annual Report of Maryland Agricultural Experiment Station, covers the period July 1, 1941 - June 30, 1942. Copies may be obtained by writing the Station at College Park. A brief summary of horticultural research, pertaining to fruit growing, as given in the Report, is as follows:

"Peach Varieties Are Being Studied—Several years of growth and fruiting behavior on most of the recent peach introductions are now being observed on the Research Farm. Observations have been made also where these varieties have been included in commercial orchards, in order to evaluate their performance under varying soil and climatic conditions.

Among the varieties heretofore not reported, the following cannot be generally recommended for commercial planting under Maryland conditions: Barbara, Best May, Colora, Fair's Beauty, Fisher, Kalhaven, Leona, Lizzie, O'Boy, Raritan Rose, Redelberta, Triogem, and White Hale.

Three new varieties—Sunhigh, New Day and Pacemaker—show commercial promise, but have not been under test long enough to warrant final statements. New additions made to the test planting in the last two years include: Early Halehaven, Early Rochester, Halo, New Discovery, Red Hale, Red Haven, and Wahlbert.

Peach Malady Receiving Attention—It is hoped that another year of study will reveal the factors which are responsible for the abnormal growth and fruiting behavior of peaches in certain sections of Maryland. Studies were begun during the past year on the nutritional, soil, insect, and virus disease aspects of the problem.

New Maryland Peach Variety To Be Released—It is now planned to name and release to the industry within the coming year one of the Maryland Experiment Station seedlings which has continued to show unusual promise. It is known as No. 1-15. This seedling has been under cooperative tests with growers at six points in the state for a period of five years. Previously, it has produced seven crops in the Station orchard. The fruit is a yellow freestone of Hale type, very firm, of excellent size and quality, high in color, and matures approximately five days before Elberta. It hangs tightly to the tree and remains firm, and has been picked with Elberta by some growers having it under test. Tree growth has been consistently vigorous under heavy cropping.

Waxing Apples Prolongs Storage Life and Quality—Application of a thin water-miscible wax to apples during the packing operation can now be considered feasible for the grower as a low cost method of prolonging the storage and market life of the fruit, and, in addition, reducing loss from

shriveling to a minimum under commercial storage and market handling. Studies which have been in progress over several seasons with Grimes and Golden Delicious were completed during the past year, and results will be available to all growers in Maryland Experiment Station Technical Bulletin A-14.

Factors Influencing Yield and Growth of Delicious Apples—Pollination continues to play an important part in determining the yield of Delicious apples. Three years' work has shown that Rome Beauty and Jonathan are definitely superior as pollenziers for Delicious, compared with other commercial varieties such as York Imperial, and Golden Delicious. Gallia Beauty also showed well in two of the three years. Starting with trees in good state of growth and fruiting, the omission of nitrogen fertilizer has resulted in a gradual slowing of growth, so that the trees at the end of three seasons now show definite signs of nitrogen need, such as light green foliage and poor terminal growth. However, yields during the first two seasons held up about equal to the yields from trees supplied with nitrogen. Analyses of leaves showed a marked decrease in nitrogen content on the no-nitrogen trees, compared with trees supplied with nitrate of soda, or nitrate of soda plus dried blood. Analyses of leaves also indicated a greater intake of potassium in trees supplied with dried blood in addition to nitrate of soda. No appreciable difference in amount or time of fruit drop, as measured during the entire harvest period, resulted from use of nitrate of soda, or nitrate of soda plus dried blood, even when such materials were supplied to the soil at monthly intervals during the growing season.

New Orchard Soil Covers of Promise—Conservation of soil fertility and prevention of erosion in the orchard are vital in the maintenance of satisfactory growth and producing power of trees that occupy the same land for a long period of years. New types of legumes and grasses can be of service to that end.

Of the several grasses under trial in both the peach and apple orchard, creeping fescue (Festuca rubra), weeping love grass (Eragrostus curvula), and Brage orchard grass (Dactylis glomerata) have shown considerable promise under rather low soil fertility conditions. Future work with legumes and grasses will be important in the development of a system of orchard soil management, requiring the use of more or less permanent orchard covers and the growing of mulch materials outside of the orchard area.

Newer Grape Varieties Are Recommended—Three of the many newer grape varieties being tested have been consistently outstanding,—Fredonia, Sheridan, and Seneca. Fredonia is a black variety that ripens fully two weeks before Concord. Sheridan is also a black variety and ripens just after Concord. Both of these varieties have proved to be vigorous and hardy, of high quality and possess the fruit characteristics which are desirable for commercial planting. Seneca is an early white grape, ripening a few days before Fredonia, and having unusual quality. In flavor and fruit qualities it closely resembles the European types and it should prove particularly desirable for home use and roadside sale.

Increasing Yield and Improving Size of the Blakemore Strawberry—Use of a narrow row, such as 10 inches, rather than the wider row of 30

PREMIUM LIST

MARYLAND EXHIBIT, LORD BALTIMORE HOTEL, BALTIMORE

January 12-13, 1944.

OPEN TO MARYLAND GROWERS ONLY

Exhibit will be placed on the Mezzanine Floor, Lord Baltimore Hotel, Baltimore, on Wednesday, January 12, 1944. All entries will be flat exhibits - no boxes or baskets. This year there will be no exhibits of flats or fancy baskets, but the exhibitors may set up fancy baskets to improve the decorative effect of the Show, if they desire. The flats were mere enlargements of the diamond exhibits, and required too much space. Fancy baskets were found to be too difficult to judge fairly, although they added much to the exhibit. The premiums have been increased on the classes retained in the Exhibit.

To avoid confusion and to allow the Show to be set up quickly, all exhibitors are asked to select their fruit at home and have exhibits ready to set up immediately upon arrival. Bring some "spares" or alternate fruits in case some fruits become bruised or lost in transit. Exhibits should be in place by noon, if possible. Extra fruit for sale may be brought, but pack it so that it may be stored away under the benches until the Show is taken down and fruit sales are made. Exhibitors should arrange to dispose of their fruit when the Show is taken down.

RULES - Only one entry per class is allowed one individual. For example, a grower may enter one plate or diamond display of the same variety, but he may not enter more than one plate or diamond display of that same variety. However, he may enter any number of specified varieties in any of the classes. In other words, he may enter any number of plates or diamond displays of different variety.

VARIETIES - York, Stayman, Grimes, Winesap, Golden Delicious, Rome, Delicious, Jonathan and Paragon (or Black Twig). Red Bud Sports will be grouped and judged as one variety in both plate and diamond classes, and any odd varieties not listed above, will be placed in one group and judged in both plate or diamond classed as one variety. Thus, one first, second and third place will be given to red bud sports, and one first, second and third place will be given to odd varieties, in both the plate and the diamond classes.

PREMIUM AWARDS

CLASS I - PLATES (5 apples per plate). First place $4.50,
Second place, $3.50. Third place $2.00

CLASS II-DIAMONDS (16 apples per diamond) First place $6.50,
Second place, $5.50. Third place $4.00.

BEST PLATE OF APPLES IN SHOW - One award, $5.00

BEST DIAMOND ENTRY IN SHOW - - One award, $10.00

All premium awards are made from funds provided by Maryland State Fair Board. The Exhibit is sponsored by this Fair Board, The University of Maryland, Extension Service, and the Maryland State Horticultural Society.

Any further information regarding the Exhibit may be obtained by writing A. F. Vierheller, Extension Horticulturist, University of Maryland, College Park, Maryland.

ENTRY BLANK
MARYLAND APPLE SHOW
Baltimore, Md., January 12-13, 1944.

(Please return to
(A.F.Vierheller,
(College Park, Md.,
(as soon as possibl

Name . . . . . .

Address . . . . . .

PLATES (5 apples per entry) - one plate per variety is permitted.

Varieties to be entered:

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DIAMONDS (16 apples per entry) one diamond per variety is permitted

Varieties to be entered:

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Please list all probable entries, so table space can be arranged.

It is better to over-estimate than to have too little exhibit space.

o 40 inches, definitely increases yield per acre of Blakemore strawberries, when a season does not favor early plant development and good fall development of runner plants in the thinned row system. In a very favorable season for runner plant development, such yield increases may be small, or none at all. Hence the narrow width of row acts as insurance against unfavorable weather conditions.

In the renewal of strawberry beds for second-year fruiting, the grower usually suffers a decrease in yield of 50 percent or more, compared with the first season of fruiting of Blakemore. A new system of renewal is possible with thinned row system of culture, which will give yields in the second season nearly equal to the yield of the first season. This method requires only the removal of all runners during the season following the first year of fruiting, so that the thinned plants of the first season are held over for a second year of fruiting. The cost of runner removal is probably not more than the cost of barring off and cultivating the rows as practiced under the usual method of renewal. Another method of renewing thinned rows is to allow the thinned bed to fill in with runner plants after the first fruiting, so that a matted row results, which will yield equal to the usual method of renewal. With both of these newer mehods of renewal of thinned rows, the narrow row has an advantage in yield over wider rows.

Mineral Deficiency Symptoms of Black Raspberries—Certain nutrient deficiency symptoms of the Cumberland black raspberry have been determined with a view to diagnosing growth disorders that have been occurring in commercial plantings in Western Maryland. The effect upon plant growth of a lack of each of the following single elements was studied: nitrogen, phosphorus, potassium, boron, magnesium, calcium, manganese, and iron. Lack of combinations of certain of the elements was studied also. With the exception of boron, none of the deficiency symptoms for single elements or for the combinations of two elements, showed sufficient similarity to the symptoms of the growth disorders to be of aid in clarifying these troubles. Boron deficiency symptoms, however, so closely resemble the type of growth which results from certain mosaic infections, particularly the rosetting of green mosaic, as to make differentiation difficult and careful field studies designed to clarify this aspect must be considered."

SAWDUST MULCH

That old question of the value of sawdust (either fresh or well-rotted) as mulching material, is well discussed in Michigan Quarterly Bulletin, Vol. 26, No. 1, August 1943. The experiments were conducted by L. M. Turk, Soil Chemist, Michigan Experiment Station, East Lansing. Details of the various experiments, both in the greenhouse and in the field, will not be given here, but the discussion and summary of conclusions should be of interest to producers of any crops. Here it is:

"The foregoing experiments all indicate that the depressive action of sawdust on plant growth is the result of a deficiency of nitrates in the soil. The decrease in nitrates comes about through the increase in their assimilation by microorganisms. The carbohydrate material contained in the sawdust supplies the microorganisms with food and energy which increase their demand for available nitrogen. Evidence is presented to show that

nitrate formation is not prohibited by the sawdust, but that the detrimet is a result of the assimilation of nitrates after they are formed. The results, taken as a whole, show that sawdust whether used as a mulch or mixed with the soil depresses yields of non-leguminous crops and that the depression is closely associated with a decrease in available nitrates. Furthermore, the results indicate that the depressive effect is only temporary and when sawdust is mixed with the soil, the detrimental influence will probably disappear within a year or two.

If sawdust is supplemented with some readily available source of nitrogen, it can be added to soils without fear of harmful effects. In all of the greenhouse experiments, nitrogen, whether in the form of dried blood, inorganic nitrogen, or in the form of manure, overcame the detrimental influence of sawdust.

Furthermore, the results indicate that sawdust is a satisfactory material for bedding, in that it would have no detrimental effect on the soil unless added in excess. An excess of straw bedding in manure may likewise cause a temporary depression of available nitrates in the soil.

Data reported by the Ohio Agricultural Experiment Station show that 25 pounds of sawdust has the capacity to absorb 100 pounds of liquid; in this respect, it is about equal to chopped straw and has about twice the absorbing capacity of unchopped wheat straw. As an absorbent of liquid manure, therefore, sawdust is very effective but it does not have the capacity to fix or absorb ammonia nitrogen. A ton of wheat straw used as litter in the stable can fix 4.5 pounds of ammonia nitrogen.

Sawdust has virtually no fertilizing value. Its composition with respect to nitrogen, phosphoric acid, and potash obviously will vary depending upon such factors as the type of wood from which it came, age of the wood and the degree of rotting. Fresh sawdust will contain on the average, about 4 pounds of nitrogen, 2 pounds of phosphoric acid, and 4 pounds of potash, per ton of air-dry material; this is less than one-third the total plant food usually contained in wheat straw. Not only is the plant nutrient supply low in sawdust, but its availability is also low. In the true sense of the word, sawdust cannot, therefore, be considered a fertilizing material.

The principal benefits derived by mixing sawdust with soils or using it as a mulch are largely of a physical nature. Sawdust when mixed with heavy soils, will tend to loosen them, thereby increasing ease of tillage and ease of water penetration. Because of the fact that sawdust has a high water-absorbing capacity, it would increase the water-holding capacity of heavy soils, especially those in a poor physical condition. Sawdust will decrease losses due to water erosion because of increased water-holding capacity and ease of water penetration. The structure and aeration of heavy soils may be improved by the addition of sawdust.

The principal benefit to be derived from mixing sawdust with sandy soils is to increase their water-holding capacity.

When sawdust is applied as a mulch, its chief function is to protect the moist soil from the direct rays of the sun, and from direct contact with wind and warm dry air. The mulch may reduce cracking of the

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soil and, in some instances, limit capillary movement of moisture. The mulch may bring about an increased absorption of rainfall by reducing surface runoff. Furthermore, a sawdust mulch may prevent the running together and crusting of the surface soil under the impact of raindrops.

It is evident that sawdust may exert many beneficial effects when mixed with the soil or used as a mulch. In soils adequately supplied with nitrogen, or if the sawdust is supplemented with nitrogen when used on soils deficient in this element, it may have many beneficial effects. It is to be emphasized, however, that sawdust is an inactive type of organic matter from the chemical point of view and that its effects are largely physical.

All the evidence presented in this paper indicates that sawdust can be satisfactorily applied to soils containing an adequate supply of nitrogen or if supplemented with sufficient nitrogen to off-set the probable depressive effect on the available nitrate supply in the soil.

The results reported here show that nitrogen added in sufficient quantities to give the sawdust the equivalent of about 2 percent nitrogen (225 pounds of nitrate of soda, or 180 pounds of sulfate of ammonia per ton) will overcome the detrimental effects of the sawdust in soils very low in available nitrogen."

UNITED COOPERATION

No fruit grower will ever know just how much hard consistent work was done by organizations and individuals, in connection with the apple "set-aside" orders and ceiling prices. Since the first of the year, The National Apple Institute, International Apple Association, Appalachian Apple Service, Cooperative Fruit and Vegetable Association, and others, have been on the job day and night, trying to get a real consideration of the grower's side of these problems, before the proper authorities. The fine work of the Secretaries of these organizations: John Chandler, Sam Fraser, Carroll Miller, and Porter Taylor, along with the good work of Henry Miller, Jr., Paul Stark, Reuben Benz, also several Senators and Representatives, along with representatives of the National Grange, Farm Bureau and Farm Cooperative Council, should be deeply appreciated by every fruit grower. The officials in charge of the program: Marvin Jones, Prentiss M. Brown, and Judge Fred M. Vinson were very sympathetic and cooperative, and our thanks are extended to them. Then the good work of Carl Wooster took the rough edges off the administration of the program. Being a fruit grower and a solid practical thinker, Mr. Wooster quickly had several kinks removed that were impractical in the working of the apple processing program. Mr. Ralph Headley has also done a good job in the processing deal.

But suppose these organizing groups had not been in the picture. Could the apple growers of 32 states have presented their case with a solid front? In the Cumberland-Shenandoah section, Appalachian Apple Service is the apple publicity agent, supported by voluntary subscriptions by growers—1¢ per bushel of apples of utility grade or better, actually sold. It receives sluggish support from growers, yet is doing a good job. It, in turn, helps support the National Apple Institute, which goes to bat for us in our

National peach and apple problems. The State Horticultural Societies also contribute to these organizations. They are not just jobs created for somebody. Some of the jobs are gratis, others with only a small salary and pleny of work. If this work is to go on, every grower must join up and contribute. You'll not get so much service so cheaply anywhere else. Remember, in all of Nature's set-up, there is either growth or decay—nothing stands still. Also remember that as soon as the banana leaves the bunch, it gets skinned. Let's join the bunch and make grow the good work that is being carried on by the funds of a few, stout-hearted persistent and far-seeing growers. To promote our interests we must work as national apple growers; "rugged individualism" is out.

OLD PAINT

Everybody has some unused paint set away for future use, but it usually dries or hardens or forms a gummy skin on top. We hear that melted paraffin poured over the surface of the unused paint before storing it away, will keep it in good condition.

THE APPLE CROP

The commercial apple crop for Maryland (apples produced in the commercial areas of the State, including apples for fresh fruit and processing) was estimated October 1 as 837,000 bushels compared to an estimated 1,026,000 bushels on September 1st, and a crop of 2,211,000 bushels in 1942. The estimate is 31% of normal. The national commercial apple crop is figured at 50% of normal, or a total of 90,057,000 bushels compared to 128,597,000 bushels in 1942.

THE ANNUAL MEETING

Plans are being made for the Forty-Sixth Annual Meeting of Maryland State Horticultural Society to be held at Hotel Alexander, Hagerstown, Maryland, on Wednesday and Thursday, January 5 and 6, 1944. Programs will probably be mailed just after Christmas. Plan now to be present, as the discussions will concern the present problems of fruit growers. All growers everywhere are invited.

THE APPLE EXHIBIT

Rules governing the apple exhibit to be held in Baltimore, are enclosed. Growers planning to exhibit should list their entries and send them to A. F. Vierheller, College Park, Md., on the enclosed entry blank.

Bones: "I understand that your wife is a finished singer".
Jones: "Not yet, but the neighbors almost got her last night."

Farmer Giles' hen suffered from shell-shock recently, when the eggs she sat on, hatched out a flock of ducks.

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